



BioBlitz Count Update from the Saguaro NP BioBlitz 2011

Introduction

On October 21-22, 2011, Saguaro National Park became the fifth park to host the annual BioBlitz. Starting in 2006 and continuing until the 100th Anniversary of the National Park Service in 2016, the National Geographic Society and the National Park Service are sponsoring ten annual BioBlitzes, each a 24-hour scientific inventory and celebration of the diversity of life in a selected premier national park. These events are designed to make connections between parks, science, and young people; stimulate scientific research in national parks; and publicly celebrate the amazing biodiversity that parks protect.

The 2011 BioBlitz was a huge event and great success! More than 5,000 participants, including over 200 scientists and 2,100 school children, searched for species and learned about the amazing diversity in the Sonoran Desert and Sky Island region of Arizona. Students helped collect and identify lichens and insects in the desert environs of the Tucson Mountains, and studied tracks and set up remote wildlife cameras in the Rincon Valley. A few climbed up over 8,000 feet on Mica Mountain, where they camped and explored the pine forests to find and learn about butterflies, bryophytes, and migratory birds. In the Science Tent at the BioBlitz Base Camp, public participants used microscopes to examine lifeforms – endophytes and tardigrades - that many of them had previously never heard of, as well as to view photos and live specimens of larger animals.

Primary sponsors included the Friends of Saguaro National Park and the Arizona Sonora Desert Museum, but many other groups contributed funding, volunteers, expertise, and many other creative forms of support. Tucson really rose to the occasion as the entire community supported and participated in the 2011 BioBlitz.

Trends and Status

When the original count of 859 identified species was revealed at the Base Camp on the afternoon of October 22, 2011 we knew the number would continue to increase. Since the event, scientists and technicians have spent hundreds of hours indentifying unknowns, confirming previous identifications, and calling in experts to review specimens. However, it may be years before some of the specimens collected during the Bioblitz can be identified beyond the family or genus level to species. This is because many small insects, in particular,



Students dissect the decaying material of a saguaro cactus to find the insects that live on dying saguaros and help with decomposition

are so difficult to identify that only a few experts (some of whom do not even live in the US) know enough about their important characteristics to key them out. The current list of 1106 (updated in October 2013) includes only individuals that have been identified to the species level so far.

Saguaro BioBlitz 2011 Species Count

Updated October 1, 2013

Species Groups	Actual Count
Amphibians	3
Birds	107
Fungi	197
Invertebrates	324
Mammals	25
Non-Vascular Plants	25
Reptiles	36
Vascular Plants	389
Total	1106

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Scientist Dr. Betsy Arnold preps plant clippings to grow endophytes in the lab in the following few months

Biodiversity Highlights

Saguaro's BioBlitz has already provided many exciting finds!

- John Spence, a biologist from Glen Canyon National Recreation Area, found several species of bryophytes (mosses and liverworts) that are new to the park, including *Rosulabryum leptotorquescens*, new to North America, and *Bryum* sp. nov. "*chiricahuensis*" which is new to science, meaning it has never been described before.

- Entomologists (insect scientists) from around the country worked from the desert to the mountaintops collecting literally thousands of insects during the BioBlitz. Because Saguaro's current species list contains less than 50 insect species, most of the ones collected during the BioBlitz will be newly documented for the park.

- Dr. Betsy Arnold's lab at the University of Arizona discovered 191 species of endophytic fungi that live inside plants in the park, such as desert broom and creosote bush; all species found are new to the park and many of these species have never been previously described.



A look at Dr. William Miller's process for collecting tardigrades. Photo by Katja Schulz



Students collect wildlife camera data in the backcountry

Citizen Science

In addition to helping scientists gather data in over 120 public inventory programs, "citizen scientists" participated in the BioBlitz by taking their own photos and uploading them to Saguaro's Flickr site.

For specimen photos, check out: <http://www.flickr.com/groups/1725510@N21/>

For more photos check out: <http://www.flickr.com/search/?q=Saguaro%20BioBlitz>

BioBlitz photos of species can also be found at the Project Noah website: <http://www.projectnoah.org/missions/6986014>

What's Next?

Further information on the 2011 BioBlitz and the count updates are available on the Saguaro National Park's website at www.nps.gov/sagu. Here you can also find links to the list of species found during the event, to NGS's FieldScope, an online mapping program with observations, photos, and metadata collected during BioBlitzes to date; the National Park Foundation's Electronic Field Trip, a live broadcast for schoolchildren that reached tens of thousands of kids throughout the US; and many blogs about the event. You will find links to media coverage following the BioBlitz and any resources scientists want to share about their work.

If you would like to be involved in Saguaro National Park's ongoing efforts to document and learn more about the incredible diversity of the Sonoran desert and the Sky Island region, please contact Don Swann at Don_Swann@nps.gov



Students from the Ironwood Tree Experience hike to a remote backcountry site to help inventory species with scientists



Scientist Stephan Buchmann working diligently sorting and identifying bees in the science tent

More Information

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